No. 200100092

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

State of Oregon by/through STBFE acting on behalf of Oregon State University

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

POTATO

'Mazama'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this twenty-seventh day of September, in the year two thousand and seven.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER

State of Oregon by/through STBHE acting per Correspondence May 29, 2007 on behalf of Oregon State University LMC 7-16-07 LMC May 29, 2007

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
NDO 2686-6R

3. VARIETY NAME
Mazama

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*

Office of Technology Transfer
Oregon State University
312 Kerr Administration Building
Corvallis, OR 97331

5. TELEPHONE *(Include area code)*
541.737-0674

6. FAX *(Include area code)*
541.737-3093

FOR OFFICIAL USE ONLY

PVPO NUMBER
200100092

FILING DATE
02/02/01

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Educational Institution

8. IF INCORPORATED, GIVE STATE OF INCORPORATION

9. DATE OF INCORPORATION

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*

Office of Technology Transfer
c/o Sarah Mabee
Oregon State University
A312 Kerr Administration Bldg
Corvallis, OR 97331-2140 USA

per Correspondance July 11, 2007 LMC July 16, 2007

FILING AND EXAMINATION FEES:
$ 2,705.00
DATE 02/02/01

CERTIFICATION FEE:
$ 768.00
DATE 6/11/07

11. TELEPHONE *(Include area code)*
541-737-8100

12. FAX *(Include area code)*
541-737-3093

13. E-MAIL
email Sarah.Mabee@oregonstat.edu

14. CROP KIND *(Common Name)*
Potato

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

- a. ☒ Exhibit A. Origin and Breeding History of the Variety
- b. ☒ Exhibit B. Statement of Distinctness
- c. ☒ Exhibit C. Objective Description of Variety
- d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
- e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
- f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- g. ☒ Filing and Examination Fee ($2,705), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)* $2,705

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*

☒ YES *(If "yes", answer items 20 and 21 below)* ☒ NO *(If "no," go to item 22)* 02-02-01 JMP

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? ☐ YES ☒ NO

IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

21. DOES THE OWNER SPECIFY THAT THE CLASSES BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☒ NO

IF YES, SPECIFY THE NUMBER 1, 2, 3, etc. ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?

YES (NO)

IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?

☐ YES ☒ NO

IF YES, GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
W Hollan Hostetler			
NAME *(Please print or type)*		NAME *(Please print or type)*	
William Hostetler			
CAPACITY OR TITLE	DATE
Director of Technology Transfer	1/31/01
CAPACITY OR TITLE	DATE

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for $4,382 ($518 filing fee and $3,864 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice)*. **NEW:** With the application for a seed reproduced variety **or by direct deposit soon after filing**, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to **reproduce** the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of $768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: http://www.ams.usda.gov/science/pvpo/PVPindex.htm

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SPECIFIC INSTRUCTIONS:
To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. http://www.ams.usda.gov/lsg/seed.htm.

ITEM

19a. Give:
(1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

20. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

23. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

24. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

22. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

23. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

24. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

Exhibit A: Origin and Breeding History of the Variety

Mazama was initially selected by Oregon State University Agriculture Experiment Station scientists at the Klamath Experiment Station, Klamath Falls, Oregon, in 1989 from a cross between 1196-2R and Redsen performed by Dr. Robert Johansen of North Dakota State University, Fargo, North Dakota.

It was then tested as NDO2686-6R (ND=North Dakota cross, and O=Oregon selection) at Klamath Falls and Corvallis, Oregon, and at Tulelake and Bakersfield, California, from 1990 to 1993. Formal evaluation of NDO2686-6R in Western Regional red-skinned trials occurred at eight locations in six western states in 1994, 1995, and 1997. The Oregon State University Potato Variety Development Program, led by Dr. Alvin R. Mosley, and Oregon State University sponsored NDO2686-6R in all trials and supplied all seed. Mazama was released in 2000 by Oregon State University, in cooperation with North Dakota, California, Idaho, and Washington.

The stable and uniform characteristics of the subject variety, discussed elsewhere herein, were observed annually over the time interval from at least 1989 to 1997. These observations occurred in Oregon, California, and/or Western Regional Trials.

Breeding History:
Mazama was selected from a cross between Redsen (male parent) and ND1196-2R (female parent); the attached pedigree chart shows the parental lineage for three previous generations.

Variants:
At this point, no predictable variants have been specifically identified, though it is expected that variants will occur in the future. Most potato varieties eventually produce mutant plants known as "giant hills," "bolters," or "bull plants." It is expected that these plants will be found in Mazama at a very low frequency.

Selection Criteria:
Selection criteria for Mazama included tuber skin and flesh color (red skin, white flesh), small tuber size, tuber uniformity, roundness/smoothness, shallow eyes, high marketable yield, and overall performance relative to leading red potato varieties (e.g., Red LaSoda and Dark Red Norland).

Breeding Method:
A traditional breeding process was used. Male and female parents were crossed, followed by planting the seed produced, generating minitubers, and subsequent selection based on established criteria. Approximately 150 crosses were made, and three fruit from each cross (approximately 200 seeds/fruit) were planted. Seedlings were grown in a greenhouse, and greenhouse-produced tubers were field-planted. Mazama was line selected from these plantings.

Difference from Original Material:
Mazama is superior to its parents and siblings in color (brighter red tuber skin), tuber uniformity, tuber appearance, and yield (higher marketable yield).

Exhibit A: Origin and Breeding History of the Variety (continued)

Variety Name:
As a permanent potato variety name, Mazama is unique to this variety as shown in The Potato Association of America "North American Potato Variety Inventory" (http://www.umaine.edu/PAA/PVI.htm).

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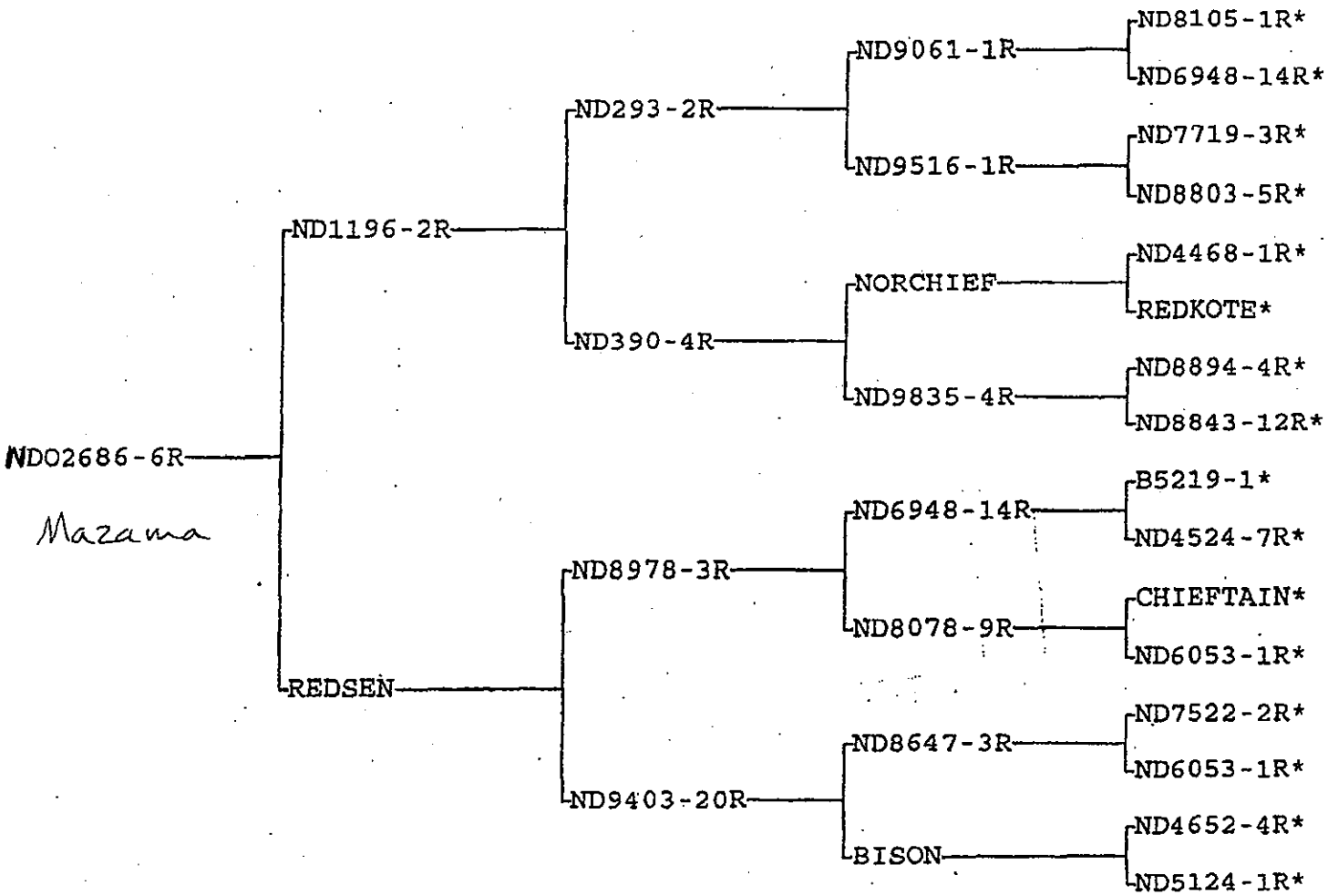
CLONE: NDO2686-6R



CLONE: NDO2686-6R
BREEDER: YEAR:
INSTITUTIONS:
CITATION:

TUBER TYPE: OVAL
SKIN TYPE: RED
FLOWER COLOR:
MATURITY CLASS: MED EARLY
YIELD CATEGORY: MEDIUM
USAGE CLASS: FRESH
OTHER INFORMATION:
SYNONYMS:

* PEDIGREE CONTINUES BEYOND FOURTH GENERATION IN DATABASE

Exhibit B: Statement of Distinctiveness

Mazama is most similar to the potato varieties Red LaSoda and Dark Red Norland.

Red LaSoda and Dark Red Norland are commonly used as reference varieties in northwest potato variety development programs, against which potential new red-skinned varieties are compared. While Mazama has characters in common with both, it has a number of distinctive characters which are stated below.

1) Mazama vines are semi-erect to spreading, whereas Red LaSoda vines are erect, and Dark Red Norland vines are erect to semi-erect.
(See Document B-1.)

2) Mazama stems have strong anthocyanin coloration, whereas both Red LaSoda and Dark Red Norland have absent to weak coloration.
(See Document B-2.)

3) Mazama leaves have strong petiole anthocyanin coloration, whereas Red LaSoda has weak coloration and Dark Red Norland has absent to weak coloration.
(See Document B-3.)

4) Mazama leaves have medium terminal leaf margin waviness, whereas Red LaSoda has no waviness and Dark Red Norland has slight waviness.
(See Document B-3.)

5) Mazama calyx anthocyanin coloration is medium, similar to that of Red LaSoda, whereas Dark Red Norland has weak calyx anthocyanin coloration.
(See Document B-5.)

6) Mazama anther shape is a pear-shaped cone, similar to that of Red LaSoda, whereas Dark Red Norland has a broad cone anther shape.
(See Document B-5.)

7) Mazama corolla shape is semi-stellate, similar to that of Dark Red Norland, whereas Red LaSoda has a pentagonal corolla shape.
(See Document B-5.)

8) Mazama anther color is Yellow-Orange (17B RHS), similar to that of Dark Red Norland (17B RHS), whereas Red LaSoda anther color is less orange (Yellow-Orange, 14A RHS).
(See Document B-5.)

9) Mazama corolla inner surface color is Purple-Violet (82B RHS), whereas that of Red LaSoda is lighter (Purple-Violet, 82D RHS), and Dark Red Norland has a Purple (76B RHS) corolla inner surface color.
(See Document B-5.)

Exhibit B: Statement of Distinctiveness (continued)

10) Mazama tuber color is Red-Purple (58A RHS) and darker than either Red LaSoda (Red-Purple; 58D RHS) or Dark Red Norland (Red-Purple; 58B RHS).
(See Document B-10.)

11) Mazama tuber eye depth is shallow, whereas Red LaSoda eye depth is very deep, and Dark Red Norland eye depth is deep.
(See Document B-10.)

12) Mazama eyes are predominantly apical, whereas both Red LaSoda and Dark Red Norland eyes are mostly evenly distributed.
(See Document B-10.)

13) Mazama tubers have a smaller average number of eyes than Red LaSoda and Dark Red Norland.
(See Document B-13.)

14) Mazama light sprouts have a conical general shape, where as both Red LaSoda and Dark Red Norland light sprouts are broad cylindrical shaped.
(See Document B-14.)

15) Mazama has a closed light sprout tip habit, whereas that of Red LaSoda is intermediate and that of Dark Red Norland is open.
(See Document B-14.)

16) Mazama has a higher yield of small tubers (< 4 ounces) than either Red LaSoda or Dark Red Norland.
(See Document B-16.)

17) Mazama has a higher percent marketable yield (< 4 to <= 10 ounces) than either Red LaSoda or Dark Red Norland.
(See Document B-16.)

18) Mazama has a lower combined yield of No. 2's and culls than either Red LaSoda or Dark Red Norland.
(See Document B-16.)

Mazama Plant

- Vines are semi-erect to spreading.

Red LaSoda Plant

- Vines are erect.

Dark Red Norland Plant

- Vines are erect to semi-erect.

Mazama Stems

- Strong stem anthocyanin coloration.

Red LaSoda Stems

- Absent to weak stem anthocyanin coloration.

Dark Red Norland Stems

- Absent to weak stem anthocyanin coloration.

Mazama Leaves

- Strong petiole anthocyanin coloration.
- Medium terminal leaf margin waviness.

Red LaSoda Leaves

- Weak petiole anthocyanin coloration.
- No terminal leaf margin waviness.

Dark Red Norland Leaves

- Absent to weak petiole anthocyanin coloration.
- Slight terminal leaf margin waviness.

Mazama Flower

- Calyx anthocyanin coloration is medium.
- Anther shape is pear-shaped cone.
- Corolla shape is semi-stellate.
- Anther color is Yellow-Orange (17B RHS).
- Corolla inner surface color is Purple-Violet (82B RHS).

Red LaSoda Flower

- Calyx anthocyanin coloration is medium.
- Anther shape is a pear-shaped cone.
- Corolla shape is pentagonal.
- Anther color is Yellow-Orange (14A RHS).
- Corolla inner surface color is Purple-Violet (82D RHS).

Dark Red Norland Flower

- Calyx anthocyanin coloration is weak.
- Anther shape is a broad cone.
- Corolla shape is semi-stellate.
- Anther color is Yellow-Orange (17B RHS).
- Corolla inner surface color is Purple (76B RHS).

Exhibit B Document B-10

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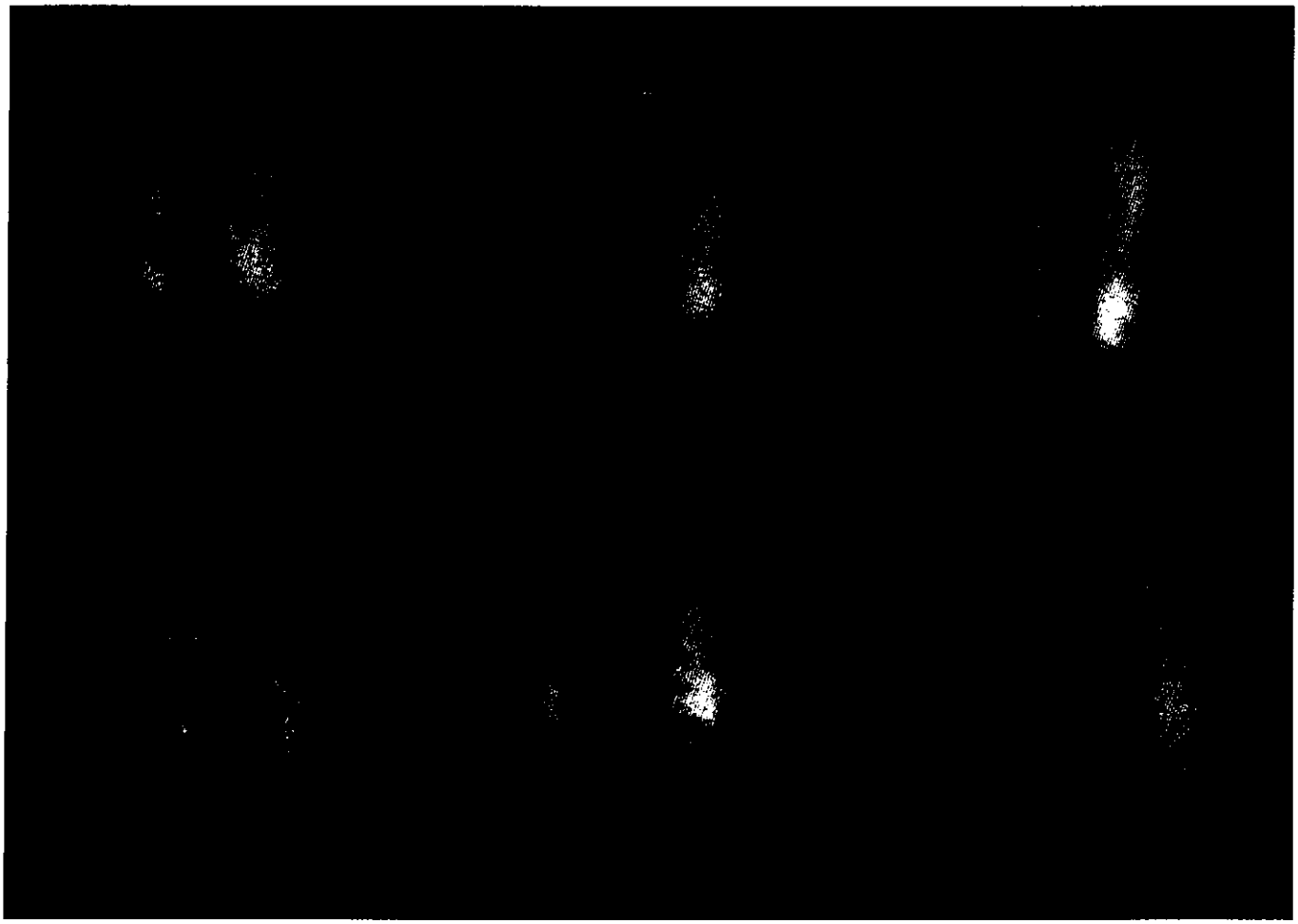
Mazama Tubers

- Tuber eye depth is shallow.
- Eyes are predominantly apical.
- Tuber color is Red-Purple (58A RHS).



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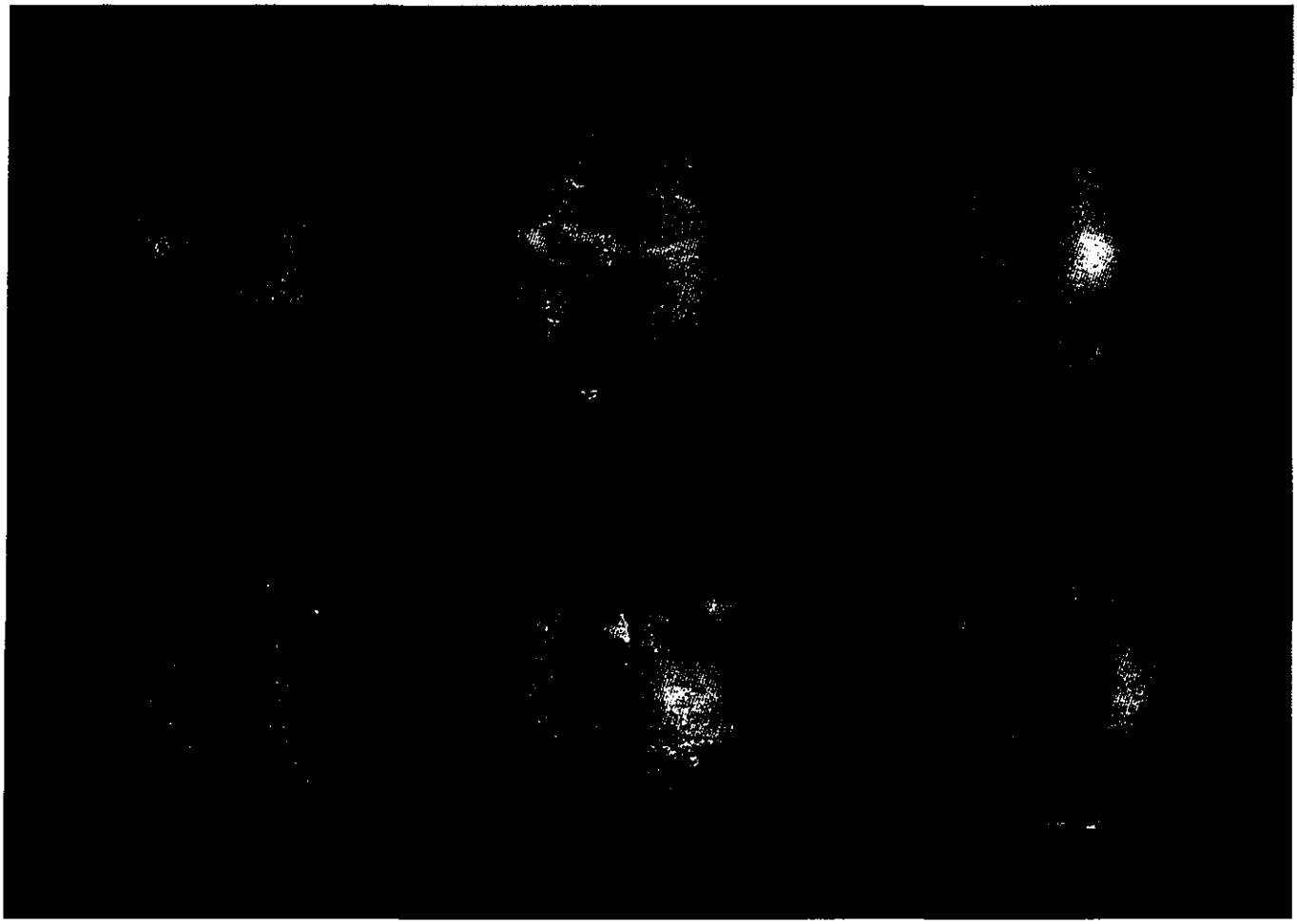
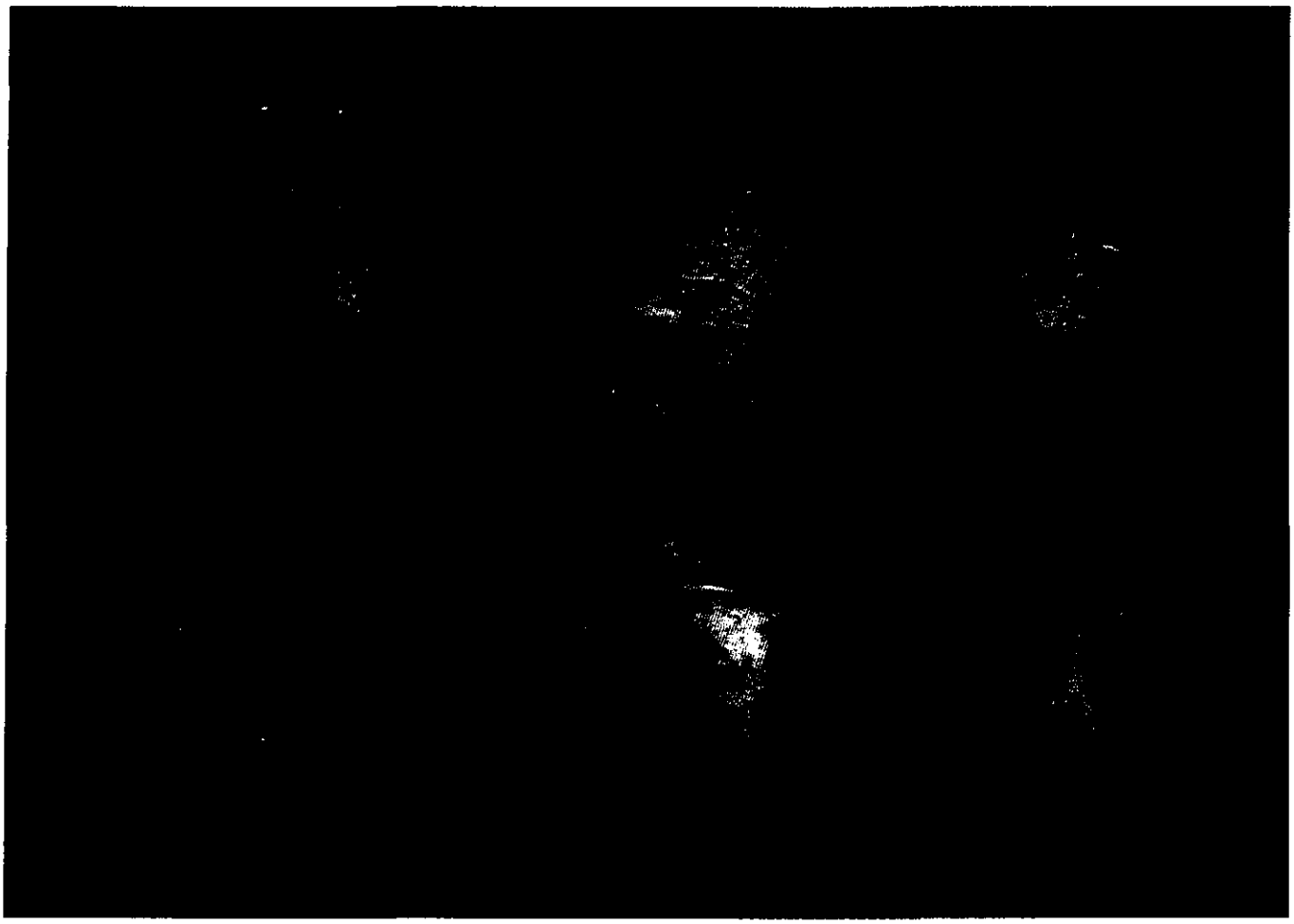
Red LaSoda Tubers

- Tuber eye depth is very deep.
- Eyes are mostly evenly distributed.
- Tuber color is Red-Purple (58D RHS).



Dark Red NorlandTubers

- Tuber eye depth is deep.
- Eyes are mostly evenly distributed.
- Tuber color is Red-Purple (58B RHS).



Distinctive Character:

- Mazama tubers have a smaller average number of eyes than either Red LaSoda or Dark Red Norland.

(Note: The original data from which this statement was derived were collected in Klamath Falls, Oregon; the average eye number was reported as 8.5, 13.4, and 14.2 for Mazama, Red LaSoda, and Dark Red Norland, respectively in Exhibit C. The original data and statistics documentation are not available. Tuber eye count data were again collected on February 2, 2007, from variety plots in Powell Butte, Oregon, and presented below.)

Tuber Eye Count

Powell Butte, Oregon; February 2, 2007

Eye counts were made on random samples of fifty 6 to12 ounce tubers from each variety.

Tuber	Mazama	Red LaSoda	Dark Red Norland
1	7	8	10
2	7	8	11
3	8	9	11
4	8	9	11
5	8	9	12
6	8	9	12
7	8	9	12
8	8	10	12
9	8	10	13
10	8	10	13
11	8	10	13
12	8	10	13
13	8	10	13
14	8	10	13
15	8	10	13
16	8	10	13
17	9	10	13
18	9	10	13
19	9	10	13
20	9	10	13
21	9	11	13
22	9	11	13
23	9	11	14
24	9	11	14
25	9	11	14
26	9	11	14
27	9	11	14
28	9	11	14
29	9	11	14
30	9	11	15
31	9	11	15
32	9	11	15
33	10	12	15
34	10	12	15
35	10	12	15
36	10	13	15
37	10	13	15
38	10	13	15
39	10	13	15
40	10	13	15
41	10	13	15
43	10	13	15
44	10	13	15
45	10	13	15
46	10	14	15
47	10	14	16
48	11	14	16
49	11	15	16
50	11	15	16
Total:	453	561	690
Average:	9.06**	11.22	13.8
LSD 1%:	0.75		

Analysis of Variance: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Mazama	50	453	9.06	0.996327
Red LaSoda	50	561	11.22	3.073061
Dark Red Norland	50	690	13.8	2.122449

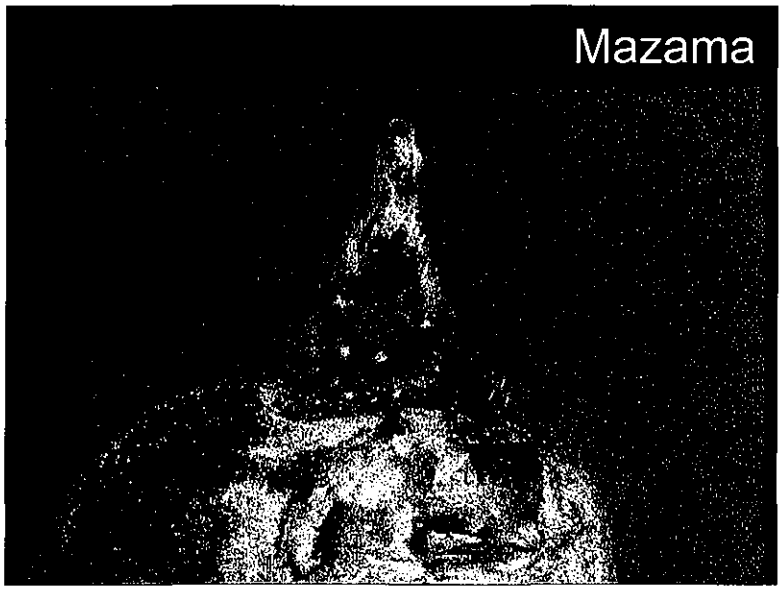
ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Varieties	563.16	2	281.58	136.428	3.16E-34	3.057622
Error	303.4	147	2.063946			
Total	866.56	149				

LSD

5%	0.566037681
1%	0.752801382

** There is a highly significant difference in the average number of tuber eyes.

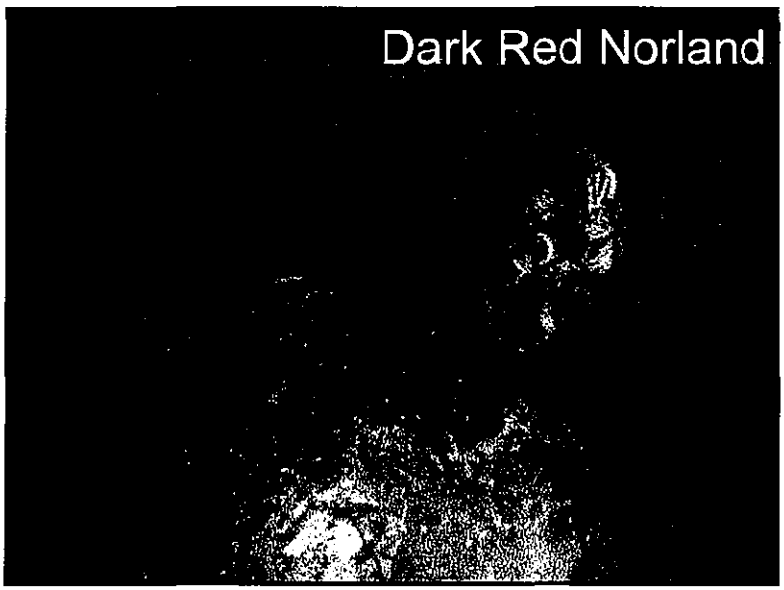


Mazama Light Sprout

- Conical sprout shape.
- Sprout tip habit is closed.

Red LaSoda Light Sprout

- Broad cylindrical sprout shape.
- Sprout tip habit is intermediate.



Dark Red Norland Light Sprout

- Broad cylindrical sprout shape.
- Sprout tip habit is open.

Distinctive Character:

- Mazama has a higher yield of small tubers (< 4 ounces) than either Red LaSoda or Dark Red Norland.
- Mazama has a higher percent marketable yield (< 4 to <= 10 ounces) than either Red LaSoda or Dark Red Norland.
- Mazama has a lower combined yield of No. 2's and culls than either Red LaSoda or Dark Red Norland.

Six years of data are presented, three at each of two locations (Klamath Falls and Corvallis, OR)
Note: All yields are reported as Hundredweight (Cwt)/acre

Trial 1
Year: 1996
Location: OSU Experiment Station, Klamath Falls, OR
Plot Size: 30 hills
Planting Date: May 24
Harvest Date: September 27

		Marketable Yield (<4 to 10 oz.)						Total	Percent
Treatment	Rep	<4 oz	4-6 oz	6-10 oz	Total	>10 oz	#2's+Culls	Yield	<4 to 10 oz
Mazama	1	103	154	136	393	105	0	498	78.9%
Mazama	2	88	73	121	282	28	7	317	89.0%
Mazama	3	89	119	176	384	33	0	417	92.1%
Mazama	4	111	131	105	347	19	1	367	94.6%
Mean		97.8a	119.3	134.5	351.5	46.3	2.0a	399.8	88.6%a
Red LaSoda	1	42	36	152	230	342	39	611	37.6%
Red LaSoda	2	31	65	189	285	375	102	762	37.4%
Red LaSoda	3	28	59	194	281	188	62	531	52.9%
Red LaSoda	4	37	50	105	192	379	96	667	28.8%
Mean		34.5c	52.5	160.0	247.0	321.0	74.8b	642.8	39.2%b
Dk. Red Norland	1	62	89	134	285	84	36	405	70.4%
Dk. Red Norland	2	61	74	131	266	110	39	415	64.1%
Dk. Red Norland	3	65	96	163	324	57	10	391	82.9%
Dk. Red Norland	4	53	71	99	223	10	8	241	92.5%
Mean		60.3b	82.5	131.8	274.5	65.3	23.3a	363.0	77.5%a
LSD (0.05)		15.1	37.6	NS	59.3	120.8	27.2	145.7	17.0

#200100092

Trial 2
Year: 1997
Location: OSU Experiment Station, Klamath Falls, OR
Plot Size: 30 hills
Planting Date: May 19
Harvest Date: September 29

		Marketable Yield (<4 to 10 oz.)						Total	Percent
Treatment	Rep	<4 oz	4-6 oz	6-10 oz	Total	>10 oz	#2's+Culls	Yield	<4 to 10 oz.
Mazama	1	76	137	194	407	111	16	534	76.2%
Mazama	2	56	137	191	384	99	7	490	78.4%
Mazama	3	122	174	151	447	65	3	515	86.8%
Mazama	4	59	165	203	427	93	10	530	80.6%
Mean		78.3a	153.3	184.8	416.3	92.0	9.0a	517.3	80.5%a
Red LaSoda	1	35	41	185	261	203	97	561	46.5%
Red LaSoda	2	33	56	115	204	215	171	590	34.6%
Red LaSoda	3	25	41	132	198	253	175	626	31.6%
Red LaSoda	4	29	46	114	189	226	200	615	30.7%
Mean		30.5b	46.0	136.5	213.0	224.3	160.8c	598.0	36.3%c
Dk. Red Norland	1	58	77	165	300	177	53	530	56.6%
Dk. Red Norland	2	52	62	161	275	202	115	592	46.5%
Dk. Red Norland	3	38	50	167	255	248	63	566	45.1%
Dk. Red Norland	4	30	58	163	251	260	77	588	42.7%
Mean		44.5b	61.8	164.0	270.3	221.8	77.0b	569.0	47.8%b
LSD (0.05)		28.8	27.2	NS	61.3	59.4	39.5	NS	9.2

Trial 3
Year: 1999
Location: OSU Experiment Station, Klamath Falls, OR
Plot Size: 30 hills
Planting Date: May 20
Harvest Date: September 30

#200100092

Treatment	Rep	Marketable Yield (<4 to 10 oz.) <4 oz	4-6 oz	6-10 oz	Total	>10 oz	#2's+Culls	Total Yield	Percent <4 to 10 oz.
Mazama	1	47	128	185	360	115	11	486	74.1%
Mazama	2	59	82	135	276	72	0	348	79.3%
Mazama	3	80	138	237	455	153	19	627	72.6%
Mazama	4	53	105	144	302	101	2	405	74.6%
Mean		59.8a	113.3	175.3	348.3	110.3	8.0a	466.5	75.3%a
Red LaSoda	1	39	43	131	213	209	155	577	36.9%
Red LaSoda	2	26	47	108	181	240	158	579	31.3%
Red LaSoda	3	15	52	89	156	335	52	543	28.7%
Red LaSoda	4	26	44	87	157	165	108	430	36.5%
Mean		26.5b	46.5	103.8	176.8	237.3	118.3c	532.3	33.5%c
Dk. Red Norland	1	36	87	211	334	289	60	683	48.9%
Dk. Red Norland	2	30	65	133	228	178	131	537	42.5%
Dk. Red Norland	3	21	72	114	207	303	19	529	39.1%
Dk. Red Norland	4	26	62	159	247	241	38	526	47.0%
Mean		28.3b	71.5	154.3	254.0	252.8	62.0b	568.8	44.3%b
LSD (0.05)		17.2	30.2	NS	100.3	78.4	50.4	NS	9

Trial 4
Year: 2001
Location: OSU Experiment Station, Corvallis, OR
Plot Size: Four rows x 25'/row (approximately 132 plants total)
Planting Date: May 19
Harvest Date: September 21
Evaluation Date: September 22-30

#200100092

Treatment	Rep	Marketable Yield (<4 to 10 oz.) <4 oz	4-6 oz	6-10 oz	Total	>10 oz	#2's+Culls	Total Yield	Percent <4 to 10 oz.
Mazama	1	62.7	64.6	205.4	332.72	99.6	14.8	447.1	74.4%
Mazama	2	67.7	103.9	187.6	359.16	58.4	15.4	433.0	83.0%
Mazama	3	64.6	48.0	113.2	225.71	134.1	12.3	372.1	60.7%
Mazama	4	72.6	91.0	128.5	292.13	64.0	36.3	392.4	74.5%
Mean		67.3a	76.9	158.7	302.4	89.0	19.7a	411.1	73.0%a
Red LaSoda	1	24.0	31.4	101.5	156.83	125.5	121.2	403.4	38.9%
Red LaSoda	2	22.1	40.0	109.5	171.59	146.4	94.1	412.1	41.6%
Red LaSoda	3	34.4	28.3	112.5	175.28	139.0	128.5	442.8	39.6%
Red LaSoda	4	27.7	35.7	87.9	151.29	74.4	130.4	356.1	42.5%
Mean		27.0b	33.8	102.9	163.7	121.3	118.5c	403.6	40.8%c
Dk. Red Norland	1	27.1	50.4	198.0	275.52	139.0	113.2	527.7	52.2%
Dk. Red Norland	2	40.6	70.7	185.7	297.05	123.6	75.6	496.3	59.9%
Dk. Red Norland	3	52.3	27.7	142.7	222.63	127.9	78.1	428.7	51.9%
Dk. Red Norland	4	33.2	32.6	135.9	201.72	159.3	99.6	460.6	43.8%
Mean		38.3b	45.4	165.6	249.2	137.5	91.8b	478.3	52.0%b
LSD (0.05)		15.5	18.3	35.8	54.2	NS	17.4	58.5	8.1

#200100092

Trial 5
Year: 2002
Location: OSU Experiment Station, Corvallis, OR
Plot Size: Four rows x 25'/row (approximately 132 plants total)
Planting Date: May 23
Harvest Date: September 24
Evaluation Date: September 25-30

		Marketable Yield (<4 to 10 oz.)						Total	Percent
Treatment	Rep	<4 oz	4-6 oz	6-10 oz	Total	>10 oz	#2's+Culls	Yield	<4 to 10 oz.
Mazama	1	137.1	90.4	161.7	389.3	0.0	57.2	446.5	87.2%
Mazama	2	162.4	91.0	249.1	502.46	57.8	81.8	642.1	78.3%
Mazama	3	99.0	75.0	340.1	514.14	101.5	46.1	661.7	77.7%
Mazama	4	166.7	70.7	321.0	558.42	48.6	70.1	677.1	82.5%
Mean		141.3a	81.8	268.0	491.1	52.0	63.8a	606.9	81.3%a
Red LaSoda	1	52.3	34.4	142.7	229.4	198.6	167.9	595.9	38.5%
Red LaSoda	2	46.7	36.3	354.9	437.88	190.0	108.9	736.8	59.4%
Red LaSoda	3	44.9	19.7	186.3	250.92	207.3	65.8	524.0	47.9%
Red LaSoda	4	53.5	21.5	89.2	164.21	188.2	142.1	494.5	33.2%
Mean		49.5b	28.0	193.3	270.6	196.0	121.3b	587.8	44.5%c
Dk. Red Norland	1	64.0	32.6	217.7	314.27	174.0	158.7	647.0	48.6%
Dk. Red Norland	2	57.2	59.7	298.9	415.74	91.6	86.1	593.5	70.1%
Dk. Red Norland	3	70.7	43.1	267.5	381.3	91.0	169.1	641.4	59.4%
Dk. Red Norland	4	101.5	30.8	169.1	301.35	78.7	159.3	539.4	55.9%
Mean		73.3b	41.5	238.3	353.2	108.9	143.3b	605.3	58.5%b
LSD (0.05)		28.4	26.3	NS	116.1	85.1	48.3	NS	13.1

#200100092

Trial 6
Year: 2003
Location: OSU Experiment Station, Corvallis, OR
Plot Size: Four rows x 25'/row (approximately 132 plants total)
Planting Date: May 20
Harvest Date: September 20
Evaluation Date: September 21-30

		Marketable Yield (<4 to 10 oz.)						Total	Percent
Treatment	Rep	<4 oz	4-6 oz	6-10 oz	Total	>10 oz	#2's+Culls	Yield	<4 to 10 oz.
Mazama	1	24.0	28.3	295.2	347.48	447.1	87.3	881.9	39.4%
Mazama	2	20.9	80.0	199.9	300.74	236.2	116.2	653.1	46.0%
Mazama	3	35.1	94.7	200.5	330.26	293.4	149.4	773.1	42.7%
Mazama	4	24.0	57.8	181.4	263.22	345.0	102.7	710.9	37.0%
Mean		26.0	65.2	219.2	310.4	330.4	113.8	754.8	41.3%a
Red LaSoda	1	6.2	21.5	129.2	156.83	143.3	97.8	397.9	39.4%
Red LaSoda	2	22.8	32.6	100.2	155.6	205.4	95.3	456.3	34.1%
Red LaSoda	3	20.9	44.9	165.4	231.24	281.7	74.4	587.3	39.4%
Red LaSoda	4	19.1	52.3	110.1	181.43	187.6	57.2	426.2	42.6%
Mean		17.3	37.8	126.2	181.3	204.5	81.0	466.9	38.8%b
Dk. Red Norland	1	23.4	56.6	98.4	178.35	82.4	125.5	386.2	46.2%
Dk. Red Norland	2	19.7	48.6	180.8	249.08	187.6	95.9	532.6	46.8%
Dk. Red Norland	3	22.1	51.0	105.8	178.97	142.7	116.9	438.5	40.8%
Dk. Red Norland	4	11.1	89.8	137.1	238.01	103.3	32.6	373.9	63.7%
Mean		19.0	61.5	130.5	211.1	129.0	92.8	432.8	49.5%a
LSD (0.05)		NS	NS	NS	83.3	107	NS	136.9	10.1

Statistical Analyses (by Site-Year)

Site-Year		Marketable Yield (<4 to 10 oz.) <4 oz.	4-6 oz.	6-10 oz.	Total	> 10 oz.	#2s+Culls	Total Yield	Percent <4 to 10 oz.
Trial 1									
1996	Dark Red Norland	60.3	82.5	131.8	274.5	65.3	23.3	363.0	77.5
1996	Mazama	97.8	119.3	134.5	351.5	46.3	2.0	399.8	88.8
1996	Red LaSoda	34.5	52.5	160.0	247.0	321.0	74.8	642.8	39.3
	Mean	64.2	84.8	142.1	291.0	144.2	33.3	468.5	68.5
	LSD (0.05)	15.1	37.6	NS	59.3	120.8	27.2	145.7	17.0
	Probability of *F*								
Trial 2									
1997	Dark Red Norland	44.5	61.8	164.0	270.3	221.8	77.0	569.0	47.8
1997	Mazama	78.3	153.3	184.8	416.3	92.0	9.0	517.3	80.5
1997	Red LaSoda	30.5	46.0	136.5	213.0	224.3	160.8	598.0	36.3
	Mean	51.1	87.0	161.8	299.8	179.3	82.3	561.4	54.8
	LSD (0.05)	28.8	27.2	NS	61.3	59.4	39.5	NS	9.2
	Probability of *F*	<0.001	0.019	0.325	0.014	0.002	0.001	0.008	<0.001
Trial 3									
1999	Dark Red Norland	28.3	71.5	154.3	254.0	252.8	62.0	568.8	44.3
1999	Mazama	59.8	113.3	175.3	348.3	110.3	8.0	466.5	75.3
1999	Red LaSoda	26.5	46.5	103.8	176.8	237.3	118.3	532.3	33.5
	Mean	38.2	77.1	144.4	259.7	200.1	62.8	522.5	51.0
	LSD (0.05)	17.2	30.2	NS	100.3	78.4	50.4	NS	9.0
	Probability of *F*	0.026	<0.001	0.112	<0.001	0.001	<0.001	0.130	<0.001
Trial 4									
2001	Dark Red Norland	38.3	45.5	165.8	249.5	137.5	91.8	478.5	52.0
2001	Mazama	67.3	77.0	158.8	302.5	89.0	19.5	411.0	73.0
2001	Red LaSoda	27.0	33.8	102.8	163.8	121.0	118.5	403.5	40.8
	Mean	44.2	52.1	142.4	238.6	115.8	76.6	431.0	55.3
	LSD (0.05)	15.5	18.3	35.8	54.2	NS	17.4	58.5	8.1
	Probability of *F*	0.002	0.003	0.010	0.002	0.136	<0.001	0.030	<0.001
Trial 5									
2002	Dark Red Norland	73.3	41.8	238.5	353.0	109.0	143.3	605.0	58.5
2002	Mazama	141.3	81.8	268.0	490.8	52.0	63.8	606.8	81.3
2002	Red LaSoda	49.5	28.0	193.3	270.5	196.0	121.3	587.8	44.5
	Mean	88.0	50.5	233.3	371.4	119.0	109.4	599.8	61.4
	LSD (0.05)	28.4	26.3	NS	116.1	85.1	48.3	NS	13.1
	Probability of *F*	<0.001	0.004	0.191	0.007	0.002	0.009	0.087	0.001
Trial 6									
2003	Dark Red Norland	19.0	61.8	130.5	211.0	129.0	92.8	432.8	49.5
2003	Mazama	26.0	65.3	219.0	310.3	330.3	113.8	754.8	41.3
2003	Red LaSoda	17.3	38.0	126.0	181.3	204.5	81.0	466.8	38.8
	Mean	20.8	55.0	158.5	234.2	221.3	95.8	551.4	43.2
	LSD (0.05)	NS	NS	NS	83.3	107.0	NS	136.9	10.1
	Probability of *F*	0.104	0.118	0.060	0.034	0.001	0.221	<0.001	0.001

Statistical Analyses (Overall)

Overall	**Dark Red Norland**	43.9b	60.8	164.1	268.7	152.5	81.7b	502.8	54.9b
Overall	**Mazama**	78.4a	101.6	190.0	369.9	120.0	36.0a	526.0	73.3a
Overall	**Red LaSoda**	30.9c	40.8	137.0	208.7	217.3	112.4c	538.5	38.8c
Overall	**Mean**	51.1	67.7	163.7	282.4	163.3	76.7	522.4	55.7
Overall	**LSD (0.05)Culitvar**	6.97	9.91	NS	26.89	28.87	12.92	NS	4.01
	Probability of *F*	0.005	<0.001	0.034	<0.001	0.003	<0.001	0.466	<0.001
Overall	**LSD (0.05) Site-Year**	6.9	11.14	29.66	33.52	23.11	19.44	42.33	4.13
Overall	**LSD (0.05) S-Y x Cv.**	18.44	26.21	57.62	NS	76.37	34.18	109.62	10.61

NAME OF APPLICANT (S)
State of Oregon by/through STBHE acting on behalf of Oregon State University

~~Item 11~~ per correspondence May 29, 2007

ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country)

Office of Technology Transfer
Oregon State University
312 Kerr Administration Building
Corvallis, OR 97331

LMC May 29, 2007

TEMPORARY OR EXPERIMENTAL DESIGNATION
NDO2686-6R

VARIETY NAME
Mazama

FOR OFFICIAL USE ONLY

PVPO NUMBER
#200100092

REFERENCE VARIETIES: Enter the reference variety name in the appropriate box.

Application Variety (V)	Reference Variety 1 (R1)	Reference Variety 2 (R2)	Reference Variety 3 (R3)	Reference Variety 4 (R4)
Mazama	Red LaSoda	Dark Red Norland		

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

1. MARKET CHARACTERISTICS:

***MARKET CLASS:**
1 = Yellow-flesh Tablestock 2 = Round-white Tablestock 3 = Chip-processing 4 = Frozen-processing
5 = Russet Tablestock 6 = Other RED TABLE-STOCK

V	R1	R2	R3	R4
6	6	6		

2. LIGHT SPROUT CHARACTERISTICS: (See Figure 1)

***LIGHT SPROUT: GENERAL SHAPE**
1 = Spherical 2 = Ovoid 3 = Conica 4 = Broad cylindrica 5 = Narrow cylindrical 6 = Other _____

V	R1	R2	R3	R4
3	4	4		

***LIGHT SPROUT BASE: PUBESCENCE OF TIP**
1 = Absent 2 = Weak 3 = Medium 4 = Strong 5 = Very Strong

V	R1	R2	R3	R4
3	4	2		

***LIGHT SPROUT BASE: ANTHOCYANIN COLORATION**
1 = Green 2 = Red-violet 3 = Blue-violet 4 = Other(describe) _____

V	R1	R2	R3	R4
2	3	2		

***LIGHT SPROUT BASE: INTENSITY OF ANTHOCYANIN COLORATION (IF PRESENT)**
1 = Absent 2 = Weak 3 = Medium 4 = Strong 5 = Very Strong

V	R1	R2	R3	R4
4	4	3		

***LIGHT SPROUT TIP: HABIT**
1 = Closed 2 = Intermediate 3 = Open

V	R1	R2	R3	R4
1	2	3		

2. LIGHT SPROUT CHARACTERISTICS: (continued)

LIGHT SPROUT TIP: PUBESCENCE
1 = Absent 2 = Weak 3 = Medium 4 = Strong 5 = Very Strong

V	R1	R2	R3	R4
3	4	2		

LIGHT SPROUT TIP ANTHOCYANIN COLORATION
1 = Green 2 = Red-violet 3 = Blue-violet 4 = Other(describe) _____

V	R1	R2	R3	R4
1	3	1		

LIGHT SPROUT TIP: INTENSITY OF ANTHOCANIN COLORATION (IF PRESENT)
1 = Absent 2 = Weak 3 = Medium 4 = Strong 5 = Very Strong

V	R1	R2	R3	R4
1	4	1		

LIGHT SPROUT ROOT INITIALS: FREQUENCY
1 = ~~Short~~ ABSENT 2 = ~~Medium~~ SOME 3 = ~~Long~~ ABUNDANT

V	R1	R2	R3	R4
2	3	2		

3. PLANT CHARACTERISTICS:

GROWTH HABIT: (See Figure 2)
3 = Erect (>45° with ground) 5 = Semi-erect (30-45° with ground) 7 = Spreading

V	R1	R2	R3	R4
6	3	4		

TYPE:
1 = Stem (foliage open, stems clearly visible) 2 = Intermediate 3 = Leaf (Foliage closed, stems hardly visible)

V	R1	R2	R3	R4
1	2	2		

MATURITY: Days after planting (DAP) at vine senescence

V	R1	R2	R3	R4
100	110	115		

PLANTING DATE:

V	R1	R2	R3	R4
MAY 20	MAY 20	MAY 20		

***REGIONAL AREA:**
1 = Pacific North West (WA, OR, ID, CO, CA) 2 = North Central (ND, WI, MI, MN, OH) 3 = North East (ME, NY, PA, NJ, MD, MA, RI,)
4 = Mid-Atlantic Erect (VI, NC, SC, South NJ, FL) 5 = South (LA, TX, AZ, NE) 6 = Canada
7 = Europe 8 = England 9 = Latin America 10 = Brazil 11 = Other _____

V	R1	R2	R3	R4
1	1	1		

MATURITY CLASS:
1 = Very Early (<100 DAP) 2 = Early (100-110 DAP) 3 = Mid-season (111-120 DAP) 4 = Late (121-130 DAP) 5 = Very Late (>130 DAP).

V	R1	R2	R3	R4
2	3	3		

4. STEM CHARACTERISTICS: Measure at early first bloom

*** STEM ANTHOCYANIN COLORATION:**
1 = Absent 3= Weak 5 = Medium 7 = Strong 9 = Very Strong

V	R1	R2	R3	R4
7	2	2		

STEM WINGS: (See Figure 3)
1 = Absent 3 = Weak 5 = Medium 7 = Strong 9 = Very Strong

V	R1	R2	R3	R4
3	3	3		

5. LEAF CHARACTERISTICS:

LEAF COLOR: *(Observe fully developed leaves located on middle 1/3 of plant)*
1 = Yellowing-green 2 = Olive-green 3 = Medium Green 4 = Dark Green 5 = Grey-green 6 = Other _____

V	R1	R2	R3	R4
4	3	3		

LEAF COLOR CHART VALUE: (Royal Horticulture Society Color Chart) or Munsell Color Chart
(Observe fully developed leaves located on middle 1/3 of plant and circle the appropriate color chart)

V	R1	R2	R3	R4
147A	137B	139A		

LEAF PUBESCENCE DENSITY:
1 = Absent 2 = Sparse 3 = Medium 4 = Thick 5 = Heavy

V	R1	R2	R3	R4
3	3	2		

LEAF PUBESCENCE LENGTH:
1 = None 2 = Short 3 = Medium 4 = Long 5 = Very Long

V	R1	R2	R3	R4
2	3	2		

(Note Descriptor #15 can be used to describe the type and length of the glandular trichomes observed.)

*** LEAF SILHOUETTE:** (See Figure 4)
1 = Closed 3 = Medium 5 = Open

V	R1	R2	R3	R4
5	5	5		

PETIOLES ANTHOCYANIN COLORATION:
1 = Absent 3 = Weak 5 = Medium 7 = Strong 9 = Very Strong

V	R1	R2	R3	R4
7	3	2		

LEAF STIPULES SIZE: (Se Figure 5)
1 = Absent 3 = Small 5 = Medium 7 = Large

V	R1	R2	R3	R4
5	4	5		

TERMINAL LEAFLET SHAPE (See Figures 6 and 7)
1 = Narrowly ovate 2 = Medium Ovate 3 = Broadly Ovate 4 = Lanceolate 5 = Elliptical 6 = Obovate 7 = Oblong 8 = Other _____

V	R1	R2	R3	R4
2	3	2		

5. **LEAF CHARACTERISTICS:** (continued)

TERMINAL LEAFLET TIP SHAPE: (See Figures 6 and 8)
1 = Acute 2 = Cuspidate 3 = Acuminate 4 = Obtuse 5 = Other _____

V	3	R1	2	R2	3	R3		R4	

* **TERMINAL LEAFLET BASE SHAPE:** (See Figure 9)
1 = Cuneate 2 = Acute 3 = Obtuse 4 = Cordate 5 = Truncate 6 = Lobed 7 = Other _____

V	4	R1	4	R2	4	R3		R4	

TERMINAL LEAFLET MARGIN WAVINESS:
1 = Absent 2 = Slight 3 = Weak 4 = Medium 5 = Strong

V	4	R1	1	R2	2	R3		R4	

NUMBER OF PRIMARY LEAFLET PAIRS: (See Figure 6)

AVERAGE:

V	5.7	R1	5.8	R2	6.0	R3		R4	

RANGE:

V	4 to 7	R1	5 to 6	R2	6 to 6	R3	to	R4	to

PRIMARY LEAFLET TIP SHAPE: (See Figures 6 and 8)
1 = Acute 2 = Cuspidate 3 = Acuminate 4 = Obtuse 5 = Other _____

V	2	R1	2	R2	2	R3		R4	

PRIMARY LEAFLET SIZE:
1 = Very Small 2 = Small 3 = Medium 4 = Large 5 = Very Large

V	2	R1	4	R2	4	R3		R4	

PRIMARY LEAFLET SHAPE: (See Figures 6 and 7)
1 = Narrowly ovate 2 = Medium ovate 3 = Broadly ovate 4 = Lanceolate 5 = Elliptical 6 = Ovate 7 = Oblong 8 = Other _____

V	1	R1	2	R2	2	R3		R4	

PRIMARY LEAFLET BASE SHAPE: (See Figures 6 and 9)
1 = Cuneate 2 = Acute 3 = Obtuse 4 = Cordate 5 = Truncate 6 = Lobed 7 = Other _____

V	4	R1	4	R2	4	R3		R4	

NUMBER OF SECONDARY AND TERTIARY LEAFLET PAIRS: (See Figure 6)

AVERAGE:

V	10.1	R1	8	R2	10	R3		R4	

RANGE:

V	5 to 15	R1	7 to 13	R2	8 to 13	R3	to	R4	to

5. LEAF CHARACTERISTICS: (continued)

NUMBER OF INFLORESCENCE/PLANT:

AVERAGE:

V	R1	R2	R3	R4
4,1	3,3	3,6		

RANGE:

V	R1	R2	R3	R4
3 to 6	3 to 4	3 to 5	to	to

NUMBER OF FLORETS/INFLORESCENCE:

AVERAGE:

V	R1	R2	R3	R4
13,8	17,7	20,5		

RANGE:

V	R1	R2	R3	R4
9 to 18	11 to 27	14 to 29	to	to

*** COROLLA INNER SURFACE COLOR CHART VALUE:** (Royal Horticulture Society Color Chart) or Munsell Color Chart (Measure predominant color of newly open flower and circle the appropriate color chart)

V	R1	R2	R3	R4
82B	82D	76B		

*** COROLLA OUTER SURFACE COLOR CHART VALUE:** (Royal Horticulture Society Color Chart) or Munsell Color Chart (Measure predominant color of newly open flower and circle the appropriate color chart)

V	R1	R2	R3	R4
82B	82D	76B		

*** COROLLA INNER SURFACE COLOR:** (Measure predominant color of newly open flower, if flowers are bi-color please use the ratio codes)
1 = White 2 = Red-violet 3 = Blue-violet 4 = Cream 5 = Red-purple 6 = Blue 7 = Pink 8 = Pink-white 9 = Purple 10 = Violet 11 = Purple-violet 13 = Violet-White 1:1 14 = Violet-White 1:3 15 = Violet-White 3:1 16 = Violet-White Halo 17 = Pink-White 1:1 18 = Pink-White 1:3 19 = Pink-White 3:1 20 = Pink-White Halo 21 = RedViolet-White 1:1 22 = RedViolet-White 1:3 23 = RedViolet-White 3:1 24 = RedViolet-White Halo 25 = BlueViolet-White 1:1 26 = BlueViolet-White 1:3 27 = BlueViolet-White 3:1 28 = BlueViolet-White Halo 12 = Other _____

V	R1	R2	R3	R4
11	11	9		

COROLLA SHAPE: (See Figure 10)
1 = Very rotate 2 = Rotate 3 = Pentagonal 4 = Semi-stellate 5 = Stellate

V	R1	R2	R3	R4
4	3	4		

6. INFLORESCENCE CHARACTERISTICS:

CALYX ANTHOCYANIN COLORATION:
1 = Absent 3 = Weak 5 = Medium 7 = Strong 9 = Very strong

V	R1	R2	R3	R4
5	5	3		

ANTHER COLOR CHART VALUE: (Royal Horticulture Society Color Chart) or Munsel Color Chart (Measure when newly opened flower is fully expanded and circle the appropriate color chart)

V	R1	R2	R3	R4
17B	14A	17B		

ANTHER SHAPE: (See Figure 11)
1 = Broad cone 2 = Narrow cone 3 = Pear-shaped cone 4 = Loose 5 = Other

V	R1	R2	R3	R4
3	3	1		

6. **INFLORESCENCE CHARACTERISTICS:** (continued)

POLLEN PRODUCTION:
1 = None 3 = Some 5 = Abundant

V	R1	R2	R3	R4
3	2	4		

STIGMA SHAPE: (See Figure 12)
1 = Capitate 2 = Clavate 3 Bi-lobed

V	R1	R2	R3	R4
1	1	1		

STIGMA COLOR CHART VALUE: (Royal Horticulture Society Color Chart) or Munsel Color Chart (Circle the appropriate color chart)

V	R1	R2	R3	R4
146 A	137C	138 A		

BERRY PRODUCTION: (Under field conditions)
1 = Absent 3 = Low 5 = Moderate 7 = Heavy 9 = Very Heavy

V	R1	R2	R3	R4
1	1	1		

7. **TUBER CHARACTERISTICS:**

* **PREDOMINANT SKIN COLOR:**
1 = White 2 = Light Yellow 3 = Yellow 4 = Buff 5 = Tan 6 = Brown 7 = Pink 8 = Red 9 = Purplish-red
10 = Purple 11 = Dark purple-black 12 = Other _____

V	R1	R2	R3	R4
9	9	9		

PREDOMINANT SKIN COLOR CHART VALUE: (Royal Horticulture Society Color Chart) or Munsell Color Chart (Circle the appropriate color chart)

V	R1	R2	R3	R4
58 A	58 D	58 B		

SECONDARY SKIN COLOR:
1 = Absent 2 = Present (please describe)

V	R1	R2	R3	R4
1	1	1		

SECONDARY SKIN COLOR CHART VALUE: Royal Horticulture Society Color Chart or Munsell Color Chart (Circle the appropriate color)

V	R1	R2	R3	R4

SECONDARY SKIN COLOR DISTRIBUTION: (See Figure 13)
1 = Eyes 2 = Eyebrows 3 = Splashed 4 = Scattered 5 = Spectacled 6 = Stippled 7 = Other _____

V	R1	R2	R3	R4

SKIN TEXTURE:
1 = Smooth 2 = Rough (flaky) 3 = Netled 4 = Russetted 5 = Heavily russetted 6 = Other _____

V	R1	R2	R3	R4
1	1	1		

7. **TUBER CHARACTERISTICS**: (continued)

*** TUBER SHAPE:** (See Figure 14)
1 = Compressed 2 = Round 3 = Oval 4 = Oblong 5 = Long 6 = Other _____

V	3	R1	3	R2	3	R3		R4	

TUBER THICKNESS:
1 = Round 2 = Medium thick 3 = Slightly flattened 4 = Flattened 5 = Other _____

V	2	R1	3	R2	3	R3		R4	

TUBER LENGTH (mm):

AVERAGE:

V	77	R1	85	R2	84	R3		R4	

RANGE:

V	57 to 102	R1	57 to 108	R2	64 to 108	R3	to	R4	to

STANDARD DEVIATION:

V	10,9	R1	15,5	R2	12,4	R3		R4	

AVERAGE WEIGHT OF SAMPLE TAKEN:

V	5 Kg.	R1	5 Kg.	R2	5 Kg.	R3		R4	

TUBER WIDTH (mm)

AVERAGE:

V	63	R1	72	R2	71	R3		R4	

RANGE:

V	52 to 73	R1	51 to 92	R2	54 to 89	R3	to	R4	to

STANDARD DEVIATION:

V	6.0	R1	10.8	R2	9.0	R3		R4	

AVERAGE WEIGHT OF SAMPLE TAKEN (g):

V	5000	R1	5000	R2	5000	R3		R4	

7. TUBER CHARACTERISTICS: (continued)

TUBER THICKNESS (mm):

AVERAGE:

V	R1	R2	R3	R4
55	58	56		

RANGE:

V	R1	R2	R3	R4
44 to 67	41 to 70	41 to 64	to	to

STANDARD DEVIATION:

V	R1	R2	R3	R4
7.0	7.6	4.9		

AVERAGE WEIGHT OF SAMPLE TAKEN (g):

V	R1	R2	R3	R4
5000	5000	5000		

TUBER EYE DEPTH:

1 = Protruding 3 = Shallow 5 = Intermediate 7 = Deep 9 = Very deep

V	R1	R2	R3	R4
3	9	7		

TUBER LATERAL EYES:

1 = Protruding 3 = Shallow 5 = Intermediate 7 = Deep 9 = Very deep

V	R1	R2	R3	R4
3	7	5		

NUMBER EYE/TUBER:

AVERAGE:

V	R1	R2	R3	R4
9.06	11.22	13.8		

RANGE:

V	R1	R2	R3	R4
7 to 11	8 to 15	10 to 16	to	to

DISTRIBUTION OF TUBER EYES:

1 = Predominantly apical 2 = Evenly distributed

V	R1	R2	R3	R4
1	2	2		

PROMINENCE OF TUBER EYEBROWS:

1= Absent 2 = Slight prominence 3 = Medium prominence 4 = Very prominent 5 = Other _____

V	R1	R2	R3	R4
1	3	2		

7. TUBER CHARACTERISTICS: (continued)

PREDOMINANT TUBER FLESH COLOR
1 = White 2 = Light Yellow 3 = Yellow 4 = Buff 5 = Tan 6 = Brown 7 = Pink 8 = Red 9 = Purplish-red
10 = Purple 11 = Dark purple-black 12 = Other _____

V	1	R1	1	R2	1	R3		R4	

PRIMARY TUBER FLESH COLOR CHART VALUE: Royal Horticulture Society Color Chart or Munsell Color Chart (Circle the appropriate color chart)

V	155 B	R1	155 B	R2	155 C	R3		R4	

SECONDARY TUBER FLESH COLOR:

1 = Absent 2 = Present, please describe: _____

V	1	R1	1	R2	1	R3		R4	

SECONDARY TUBER FLESH COLOR CHART VALUE: Royal Horticulture Society Color Chart or Munsell Color Chart (Circle the appropriate color chart)

V		R1		R2		R3		R4	

NUMBER OF TUBERS/PLANT:
1 = Low (<8) 2 = Medium (8-15) 3 = High (>15)

V	2	R1	1	R2	1	R3		R4	

8. DISEASES CHARACTERISTICS:

DISEASES REACTION: 0 = Not Tested 1 = Highly Resistant 2 = Resistant Few Symptoms 3 = Resistance Few Lessions in Number and Size 4 = Moderately Resistance 5 = Intermedia Susceptible 6 = Moderate Susceptible 7 = Susceptible 9 = Highly Susceptible

LATE BLIGHT: (Phytophthora)

V	R1	R2	R3	R4
7	7	7		

EARLY BLIGHT: (Alternaria)

V	R1	R2	R3	R4
0	0	0		

SOFT ROT (Erwinia)

V	R1	R2	R3	R4
0	0	0		

COMMON SCAB (Streptomyces)

V	R1	R2	R3	R4
0	0	0		

POWDERY SCAB (Spongospora)

V	R1	R2	R3	R4
0	0	0		

DRY ROT (Fusarium)

V	R1	R2	R3	R4
6	0	0		

POTATO LEAF ROLL VIRUS (PLRV)

V	R1	R2	R3	R4
7	7	7		

8. DISEASES CHARACTERISTICS: (continued)

POTATO VIRUS X (PVX)

V	R1	R2	R3	R4
7	7	7		

POTATO VIRUS Y (PVY)

V	R1	R2	R3	R4
7	7	7		

POTATO VIRUS M (PVM)

V	R1	R2	R3	R4
0	0	0		

POTATO VIRUS A (PVA)

V	R1	R2	R3	R4
0	0	0		

GOLDEN NEMATODE (Globodera)

V	R1	R2	R3	R4
0	0	0		

ROOT – KNOT NEMATODE (Meloidogyne)

V	R1	R2	R3	R4
0	0	0		

OTHER DISEASE _____

V	R1	R2	R3	R4

PHYSIOLOGICAL DISORDER

1 = Malformed shape 2 = Tuber cracking 3 = Feathering 4 = Hollow heart 5 = Internal necrosis
6 = Blackheart 7 = Internal sprouting 8 = Other _____

V	R1	R2	R3	R4

9. PESTS CHARACTERISTICS:

PEST REACTION: 0 = Not Tested 1 = Highly Resistant 2 = Resistant Few Symptoms 3 = Resistance Few Lessions in Number and Size
4 = Moderately Resistance 5 = Intermedia Susceptible 6 = Moderate Susceptible
7 = Susceptible 9 = Highly Susceptible

COLORADO POTATO BEETLE (CPB) (*Leptinotarsa*)

V	R1	R2	R3	R4
0	0	0		

GREEN PEACH APHID (*Myzus*)

V	R1	R2	R3	R4
0	0	0		

OTHER:

V	R1	R2	R3	R4

OTHER:

V	R1	R2	R3	R4

10. GENE TRAITS:

INSERTION OF GENES: 1 = YES 2 = NO [2]

IF YES, describe the gene(s) introduced or attach information:

11. QUALITY CHARACTERISTICS:

CHIEF MARKET:

SPECIFIC GRAVITY (wt. air/wt. air – wt. water)
1 = <1.060 2 = 1.060-1.069 3 = 1.070-1.079 4 = 1.080-1.089 5 = >1.090

V	3	R1	3	R2	3	R3		R4	

TOTAL GLYCOALKALOID CONTENT (mg./100 g. fresh tuber)

V	3	R1	3	R2	3	R3		R4	

OTHER QUALITY CHARACTERISTICS: Describe any other quality characteristics that may aid in identification, (e.g., chip-processing, french fry processing, baking, boiling, after-cooking darkening). Please attach data and corresponding protocol.

12. CHEMICAL IDENTIFICATION:

Describe chemical traits of the candidate variety that aid in its identification (e.g., protien or DSN electrophoresis). Please attach data and the corresponding protocol.

13. FINGER PRINTING MARKERS:

ISOZYMES 1 = YES 2 = NO [ ]

IF YES, attach information

14. DNA PROFILE: 1 = YES 2 = NO [ ]

IF YES, attach information

15. ADDDITIONAL COMMENTS AND CHARACTERISTICS:

Include any additional descriptors that would be useful in distringuishing the candidate variety.

Exhibit D: Additional Description of the Variety (optional)

1. "Mazama: An Early Maturing, Bright Red-Skinned Cultivar for Fresh Market"
   Rykbost, K.A., et al. 2001.
   American Journal of Potato Research (2001) 78:383-387.

2. Variety Description: "MAZAMA (NDO2686-6R)"
   Mosley, A.R., et al. 2001.
   http://oregonstate.edu/potatoes/Mazama.PDF

3. One-page Variety Profile: "Mazama"
   Adapted from the Variety Description "MAZAMA (NDO2686-6R)"
   http://oregonstate.edu/potatoes/MAZAMAProfile.pdf

Mazama: An Early Maturing, Bright Red-Skinned Cultivar For Fresh Market[1]

K. A. Rykbost[2*], R. Voss[3], S. R. James[4], A. R. Mosley[5], B. A. Charlton[2]
D. C. Hane[6], R. H. Johansen[7], S. L. Love[8], and R. E. Thornton[9]

[1]Approved for publication by Oregon State University Agricultural Communications as Technical Paper No. 11755.
[2]Klamath Experiment Station, Oregon State University, 6941 Washburn Way, Klamath Falls, OR 97603.
[3]Department of Vegetable Crops, University of California at Davis, Davis, CA 95615.
[4]Central Oregon Agricultural Research Center, Oregon State University, Madras, OR 97741.
[5]Department of Crop and Soil Science, Oregon State University, Corvallis, OR 97331.
[6]Hermiston Agricultural R & E Center, Oregon State University, Hermiston, OR 97838.
[7]Department of Horticulture and Forestry, North Dakota State University, Fargo, ND 58105 (Deceased).
[8]University of Idaho, Aberdeen R & E Center, Aberdeen, ID 83210.
[9]Washington State University, Pullman, WA 99164-6414.
*Corresponding author: Tel: 541-883-4590; Fax: 541-883-4596, E-mail: kenneth.rykbost@orst.edu.

ABSTRACT

Mazama, an early maturing red-skinned cultivar for fresh market use, was jointly released in 2000 by the Agricultural Experiment Stations of Oregon, North Dakota, California, Idaho, and Washington. Mazama was tested in irrigated trials in Oregon from 1990 to 2000 and in the Western Regional Trial in 1994, 1995, and 1997. Mazama produces lower total yields than Dark Red Norland and Red LaSoda, but similar marketable yields with a high percentage of small, high-value tubers and significantly fewer culls. In 22 location-years of replicated Oregon and California trials, Mazama produced 40% and 26% higher marketable yields of U.S. #1s under 280 g than Red LaSoda and Dark Red Norland, respectively. In three years of replicated trials in six western states, Mazama produced 115% and 102% of marketable yields of U.S. #1s under 280 g compared with Red LaSoda and Dark Red Norland, respectively. Mazama tubers are smooth skinned and shallow eyed. Mazama's bright red color does not fade in storage. Mazama is less susceptible to potato virus Y than Dark Red Norland or Red LaSoda.

INTRODUCTION

Mazama was evaluated as NDO2686-6R. The clone was selected from a 1987 cross between Redsen (Johansen, et al. 1984) and ND1196-2R, made by R.H. Johansen at North Dakota State University, Fargo, North Dakota. Mazama was initially selected at Klamath Falls, Oregon, in 1989. Early evaluations were conducted from 1990 to 1993 at Klamath Falls, Oregon, and Tulelake and Bakersfield, California. Breeders seed was produced at the Klamath Experiment Station in 1990 and subsequent increases were made at the Central Oregon Agricultural Research Center, Powell Butte, Oregon, and by private cooperators. Mazama was more widely evaluated in Oregon and the Western Regional Trial in 1994, 1995, and 1997.

Mazama is the Native Americans' legendary name for the volcanic mountain that erupted to form Crater Lake. Crater Lake National Park is located in Klamath County, Oregon.

The pedigree of Mazama is shown in Figure 1.

DESCRIPTION

Plants: *Growth habit:* Medium, semi-erect to spreading, determinate. *Stems:* Open foliage, strong anthocyanin pigmentation, weak wings. *Leaves:* Dark green; medium pubescent; open silhouette; strong anthocyanin pigment in leaf midribs and petioles; medium leaf stipules. *Terminal leaflets:* Medium ovate, acuminate tips, medium wavy margins, and cordate base. *Primary leaflets:* Four to seven pairs per leaf; narrowly ovate, with cuspidate tip, small size, and cordate base. *Secondary and tertiary leaflets:* Five to 15 pairs. Vines mature slightly earlier than Red LaSoda.

Inflorescence: Numerous (nine to 18) inflorescences per plant. *Corolla:* Purple-violet with darker inner corolla; semi-stellate shape. *Calyx:* Medium anthocyanin pigment. *Anthers:* Yellow-orange; pear-shaped cone; some pollen (has been used

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ADDITIONAL KEY WORDS: *Solanum tuberosum*, potato cultivar, creamers.

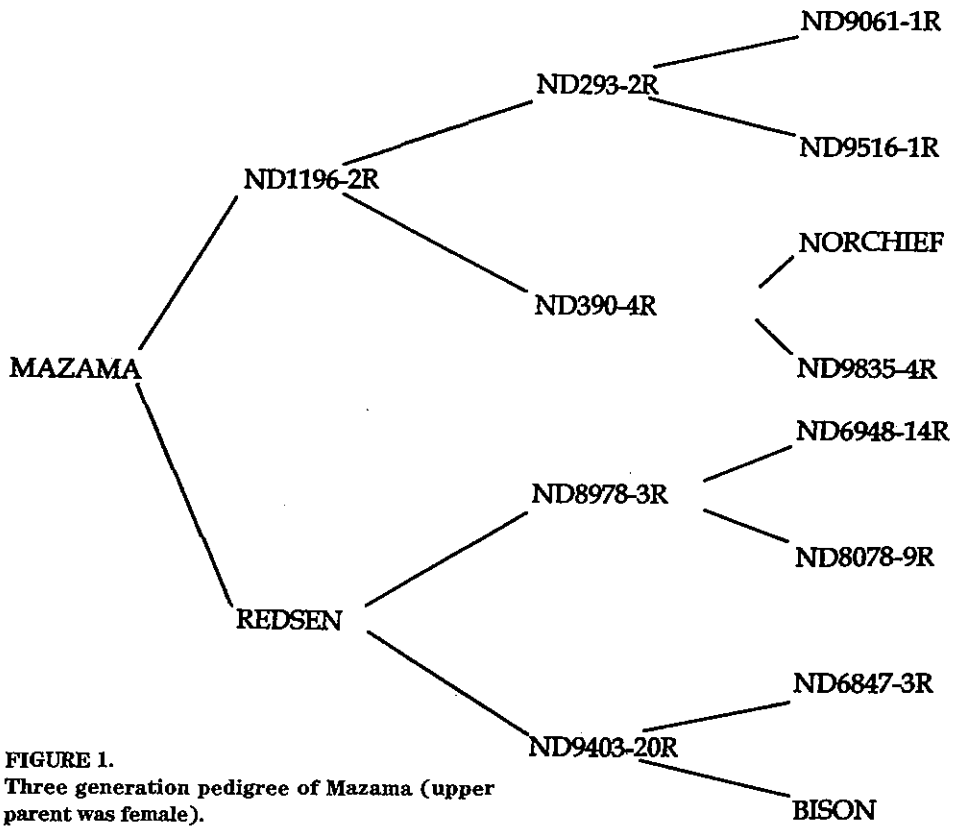

FIGURE 1.
Three generation pedigree of Mazama (upper parent was female).

successfully in crosses). *Stigma:* Capitate; yellow-green. Berry production was not observed under field conditions.

Tubers: Skin is bright red, smooth textured, and tuber shape is round to oval. The length/width/thickness ratio, measured for 112 to 280 g tubers at Klamath Falls, Oregon, is approximately 1.4/1.1/1.0 compared with 1.5/1.2/1.0 for Red LaSoda and 1.5/1.3/1.0 for Dark Red Norland. Eyes are shallow and number about eight (six to 11) per tuber; predominantly at the apical end. Eye brows are slightly prominent. Tuber flesh is white. Tuber numbers are medium (10 to 15 per plant) compared with less than eight per plant for Red LaSoda and Dark Red Norland.

CHARACTERISTICS

Mazama consistently produces lower total yields than either Red LaSoda or Dark Red Norland, but similar marketable yields with a high percentage of small tubers suitable for premium markets, and significantly fewer culls (Tables 1, 2, 3). In eight replicated trials at Klamath Falls, Oregon, from 1992 through 2000, yields of U.S. #1s under 168 g for Mazama averaged 188% and 151% of yields for Red LaSoda and Dark Red Norland, respectively (Table 2). In 24 Western Regional Trials in six states in 1994, 1995, and 1997,

TABLE 1—*Mean yield of Mazama, Red LaSoda, and Dark Red Norland at Corvallis, Oregon, and Bakersfield and Tulelake, California, from 1992 to 1998.*

			Yield (T/ha)					
			U.S. #1s					
Variety	Location	Years Tested	<112 g	112-280 g	Total Marketable	U.S. #1s >280 g	Culls	Total Yield
Mazama	Corvallis	4	10.5	35.4	45.9	5.7	0.9	52.5
	Bakersfield	5	5.6	26.2	31.8	2.0	1.0	34.8
	Tulelake	5	3.6	40.4	44.0	5.0	1.0	50.0
	Avg		6.6	34.0	40.6	4.2	1.0	45.8
Red LaSoda	Corvallis	4	3.9	27.8	31.7	25.2	8.0	64.9
	Bakersfield	5	1.3	28.1	29.4	16.5	6.3	52.2
	Tulelake	5	0.8	30.4	31.2	23.4	6.2	60.8
	Avg		2.0	28.8	30.8	21.7	6.8	59.3
Dark Red Norland	Corvallis	4	6.4	36.4	42.8	14.8	11.0	68.6
	Bakersfield	5	2.2	35.2	37.4	8.0	4.4	49.8
	Tulelake	5	1.9	26.1	28.0	10.9	8.3	47.2
	Avg		3.5	32.6	36.1	11.2	7.9	55.2

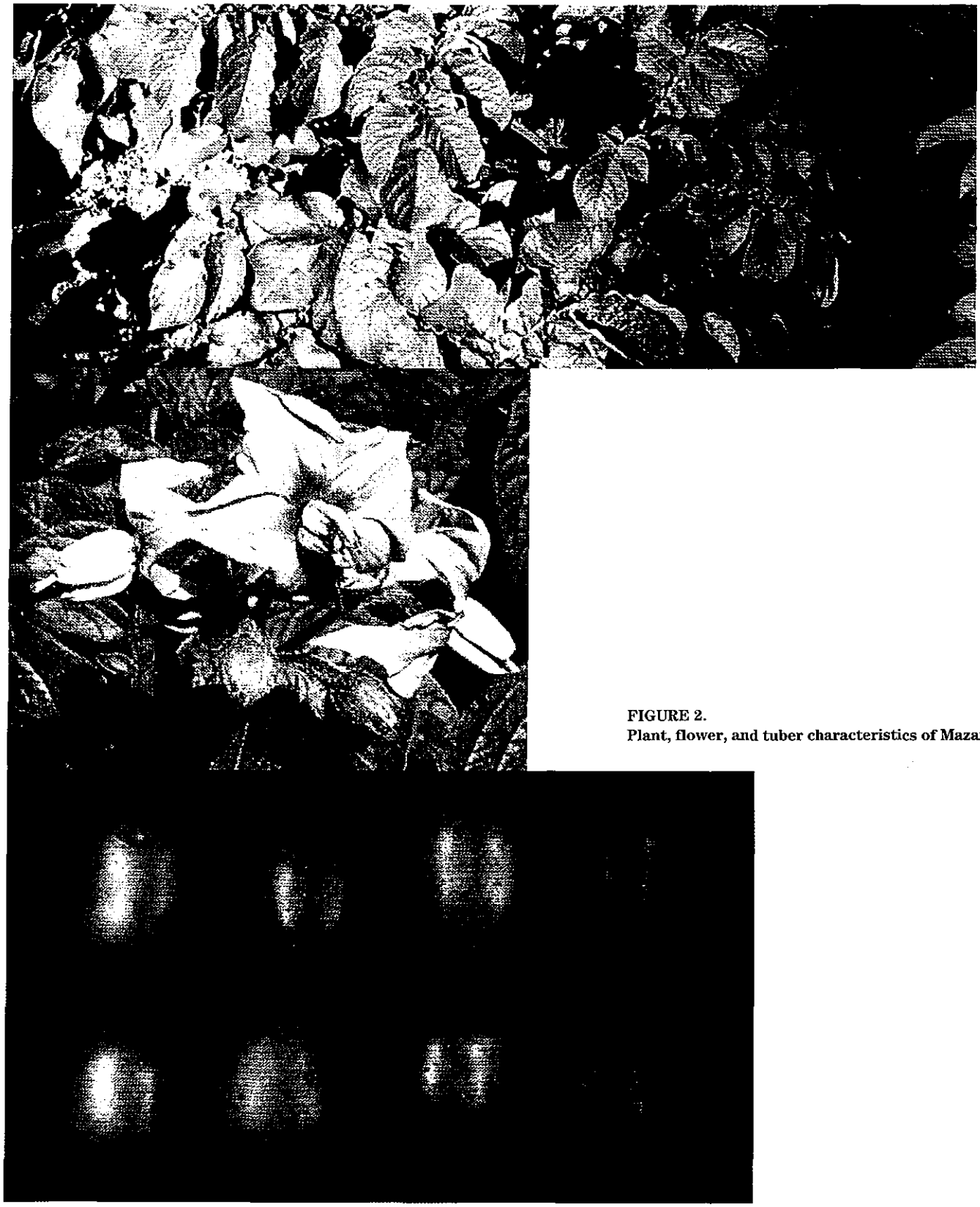

FIGURE 2.
Plant, flower, and tuber characteristics of Mazama.

TABLE 2—*Mean yield and specific gravity of Mazama, Red LaSoda, and Dark Red Norland over eight years (1992-2000) at Klamath Falls, Oregon.*

	Yield (T/ha)							
	U.S. #1s			Total	U.S. #1s		Total	Specific
Variety	<112 g	112-168 g	168-280 g	Marketable	>280 g	Culls	Yield	Gravity
Mazama	9.9	16.4	17.4	43.7	6.0	0.7	50.4	1.072
Red LaSoda	4.1	9.9	17.6	31.6	24.6	8.8	65.0	1.071
Dark Red Norland	6.2	11.2	16.5	33.9	15.3	3.5	52.7	1.067
CV(%)	21	22	28	17	50	65	17	0.3
LSD (0.05)	1.5	3.0	NS	6.5	8.3	3.2	10.2	0.004

Mazama yields of U.S. #1s under 280 g averaged 115% and 102% of yields for Red LaSoda and Dark Red Norland, respectively (Table 3). Mazama consistently produces low percentages of cull tubers (Tables 1, 2, 3).

Specific gravities in the Western Regional Trial averaged 1.073, 1.070, and 1.065 for Mazama, Red LaSoda, and Dark Red Norland, respectively (Table 4). Similar trends were observed in eight trials at Klamath Falls, Oregon (Table 2). Mazama is similar to Red LaSoda and Dark Red Norland in protein content, percent sucrose, vitamin C content, and total glycoalkaloids (Table 5).

RESISTANCE TO DISEASE AND PHYSIOLOGICAL DISORDERS

Comparisons of greenhouse post-harvest tests on seed lots produced at the Central Oregon Agricultural Research Center indicate Mazama is less susceptible to potato virus Y (PVY) than Dark Red Norland and much less susceptible than Red LaSoda. Mazama expresses typical PVY foliage symptoms which are readily observable. Mazama is susceptible to most fungal diseases and to corky ringspot caused by tobacco rattle virus. Moderate susceptibility to Fusarium dry rot has been observed in seed lots at Powell Butte, Oregon, and Stockton, California. Failure to observe late blight infection (*Phytophthora infestans*) in Mazama foliage and tubers in tests conducted at Corvallis, Oregon, in 1997 was probably due to early vine death and late occurrence of disease infestation. Foliar symptoms of bacterial ringrot are less clearly expressed by Mazama than by Red LaSoda. Tuber symptoms were similar but mild in both cultivars. Early maturity may suppress symptom expression in both cultivars.

TABLE 3—*Mean yield of Mazama, Red LaSoda, and Dark Red Norland in The Western Regional Trial in six states[1] in 1994, 1995, and 1997.*

		Yield (T/ha)					
		U.S. #1s		Total	U.S. #1s		Total
Variety	Year	<112 g	112-280 g	Marketable	>280 g	Culls	Yield
Mazama	1994	6.5	24.2	30.7	5.5	0.3	36.5
	1995	9.3	20.8	30.1	2.4	0.8	33.3
	1997	8.8	24.2	33.0	4.8	1.0	38.8
	Avg	8.2	23.1	31.3	4.2	0.7	36.2
Red LaSoda	1994	3.7	25.4	29.1	23.6	3.5	56.2
	1995	3.7	24.0	27.7	17.9	4.7	50.3
	1997	3.8	21.4	25.2	16.0	6.7	47.9
	Avg	3.7	23.6	27.3	19.2	5.0	51.5
Dark Red Norland	1994	7.3	26.2	33.5	12.0	1.5	47.0
	1995	5.7	24.2	29.9	9.7	5.4	45.0
	1997	5.2	23.1	28.3	9.7	5.6	43.6
	Avg	6.1	24.5	30.6	10.5	4.2	45.2

[1]Locations: California, Colorado, Idaho, Oregon, Texas, Washington.

Mazama tubers seldom exhibit internal or external defects. In three years of evaluation in The Western Regional Trial, no hollow heart or brown center was observed at any location (Table 4). Vascular discoloration has not been identified as a concern at any location where Mazama has been evaluated. Mazama consistently received high ratings for skin color, eye depth, and absence of growth cracks. Mazama tubers are less susceptible to skinning damage at harvest than Red LaSoda or Dark Red Norland.

USAGE

Mazama is a fresh market cultivar that will produce a relatively high percentage of tubers suitable for premium small-size packs. Preliminary culinary evaluations at Klamath Falls failed to detect after-cooking darkening, sloughing, or

TABLE 4—*Physiological defects and morphological characteristics of Mazama, Red LaSoda, and Dark Red Norland in The Western Regional Trial*[1] *in 1994, 1995, and 1997.*

Variety	% HH & BC[2]	Growth Cracks[3]	Skinning	Vine Vigor[4]	Vine Mat.[5]	Tuber Shape[6]	Skin Color[7]	Eye Depth[8]	Specific Gravity
Mazama	0	4.9	4.0	3.1	2.2	1.7	4.1	4.4	1.073
Red LaSoda	18	3.8	3.9	3.6	2.5	2.1	2.4	1.5	1.070
Dark Red Norland	3	3.9	4.0	2.9	2.5	2.4	2.9	3.3	1.065

[1]Locations: California, Colorado, Idaho, Oregon, Texas, Washington.
[2]HH = hollow heart; BC = brown center.
[3]Scale: 1 = severe; 5 = none.
[4]Scale: 1 = small, weak; 5 = large, robust.
[5]Scale: 1 = early; 5 = late.
[6]Scale: 1 = round; 2 = oval; 3 = oblong.
[7]Scale: 1 = pale; 5 = dark red.
[8]Scale: 1 = deep; 5 = shallow.

off-flavors in Mazama. An attractive appearance, uniform tuber size distribution, bright red skin color that does not fade in storage, and early maturity favor acceptance of Mazama. Certified seed of Mazama is very limited. Limited quantities of *in vitro* plantlets and prenuclear seed stocks can be obtained from the Oregon Foundation Potato Seed Program at Oregon State University. Application for plant variety protection has been made for Mazama.

ACKNOWLEDGMENT

The assistance of Oscar Gutbrod in evaluation of bacterial ringrot response, and Soloman Yilma in production of *in vitro* plantlets and prenuclear seed stocks is gratefully recognized. Partial financial support of this research was provided by the Oregon Agricultural Experiment Station, the Oregon Potato Commission, the USDA Cooperative Research, Education, and Extension Service, and the USDA Agricultural Research Service.

LITERATURE CITED

Johansen, R.H., B. Farnsworth, G.A. Secor, D. Hann, D.C. Nelson, P.H. Orr, and A.A. Boe. 1984. Redsen: A new bright red-skinned potato cultivar. Am Potato J 61:549-556.

TABLE 5—*Relative tuber composition of Mazama, Red LaSoda, and Dark Red Norland grown at Aberdeen, Idaho,*[1] *in 1997.*

Variety	% Oven Dried Solids	% (Fresh weight basis) Dextrose	Sucrose	Protein	mg/100g (Fresh weight basis) Vitamin C	Total Glycoalkaloids
Mazama	19.0	0.03	0.17	5.8	27.0	3.2
Red LaSoda	18.0	0.07	0.19	6.2	28.5	3.4
Dark Red Norland	16.5	0.04	0.16	6.5	23.2	3.0

[1]Courtesy S. Love, University of Idaho.

MAZAMA (NDO2686-6R)

A. Mosley, D. Hane, S. James, K. Rykbost, C. Shock, D. Corsini, J. Pavek, F. Boullester, B. Charlton, E. Eldredge, and S. Yilma

Oregon released MAZAMA in 2000 in cooperation with the North Dakota, California, Idaho, and Washington Agricultural Experiment Stations. Mazama is an early maturing clone with oval, bright red-skinned tubers suitable for table use and the red-skinned creamer market.

Mazama, tested as NDO2686-6R, was selected in 1989 at Klamath Falls, Oregon from a cross between 1196-2R and Redsen (Fig. 1) performed by Dr. Robert Johansen of North Dakota State University, at Fargo in 1987. Early evaluations were done at the Klamath Experiment Station at Klamath Falls, Oregon and Tulelake and Bakersfield, California from 1990 to 1993. Seed was multiplied at the Klamath Experiment Station initially, and subsequently at the Central Oregon Agricultural Research Center and by private cooperators. Mazama was widely evaluated in Western Regional red-skinned variety trials in six western states in 1994, 1995, and 1997.

Mazama produces lower total yields than Red LaSoda and Dark Red Norland, but similar marketable yields with a high percentage of small, high-value tubers, and significantly fewer culls (Tables 1 and 4).

Mazama tubers are oval with uniformly bright red skin color that does not fade in storage, and have shallow eyes (Table 2).

Mazama tubers have higher specific gravity than Dark Red Norland and Red LaSoda (Tables 1 and 4). Internal defects, including hollow heart and brown center, and external growth cracks seldom occur in Mazama. Protein content, percent sucrose, vitamin C, and total glycoalkaloids are similar for Mazama, Red LaSoda, and Dark Red Norland (Table 3). Preliminary culinary evaluations at Klamath Falls failed to detect after-cooking darkening, off-flavor, or sloughing problems in Mazama.

Mazama vines mature slightly earlier than Red LaSoda or Dark Red Norland. Vines are sensitive to metribuzin injury. Mazama is more resistant to potato virus Y than Dark Red Norland and much more resistant than Red LaSoda. Mazama expresses typical PVY foliage symptoms, which are readily observable. Mazama is susceptible to most fungal diseases and to corky ringspot caused by tobacco rattle virus.

Certified seed of Mazama is available in limited quantities from Oregon and California

seed growers. Limited quantities of *invitro* and greenhouse stocks can be arranged by request from the Foundation Potato Seed Program (Phone 541-737-5838) at Oregon State University.

Figure 1. Mazama parentage (upper parent is female).

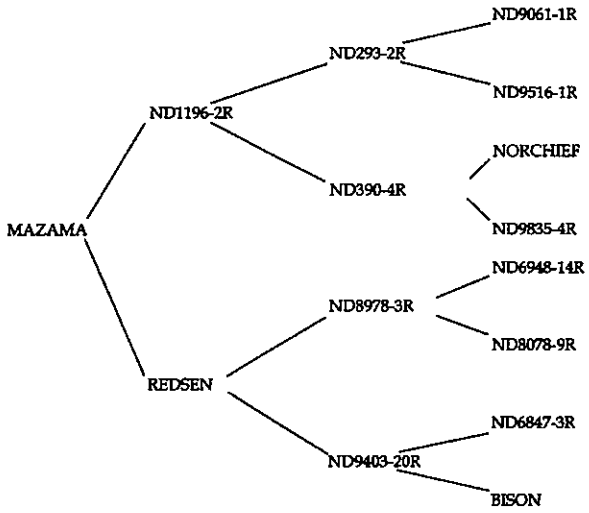

Table 1. Yield and quality characteristics of NDO2686-6R, Red LaSoda, and Dk. Red Norland in Western Regional Trials, 1994, 1995, 19971.

	Yield cwt/a						%	Oz/	Spec.
Entry	Total	<4 oz	US No. 1 4-10 oz	Total Marketable[2]	US No. 1 >10 oz	Culls	Marketable[2]	Tuber	Grav.
NDO2686-6R	323	67	203	270	42	5	84	4.5	1.073
Red LaSoda	478	34	216	250	184	40	52	6.9	1.070
Dk. Red Norland	408	59	231	290	98	30	71	5.8	1.065

[1] Locations: California, Colorado, Idaho, Oregon, Texas, Washington

[2] Yield < 4 oz. - ≤ 10 oz.

Table 2. Physiological defects and Morphological characteristics of NDO2686-6R, Red LaSoda, & Dk. Red Norland in Western Regional Trials, 1994, 1995, 19971.

Entry	% HH & BC[2]	Growth Cracks[3]	Skinning[4]	Vine Vigor[5]	Vine Mat.[6]	Tuber Shape[7]	Skin Color[8]	Eye Depth[9]
NDO2686-6R	0	4.9	4.0	3.1	2.2	1.7	4.1	4.4
Red LaSoda	18	3.8	3.9	3.6	2.5	2.0	2.4	1.5
Dk. Red Norland	3	3.9	4.0	2.9	2.5	2.0	2.9	3.3

[1] Locations: California, Colorado, Idaho, Oregon, Texas, Washington

[2] HH = Hollow Heart; BC = Brown Center

[3] Growth Cracks: 1 = Severe; 5 = None

[4] Skinning: 1 = Severe; 5 = None

[5] Vine Vigor: 1 = Weak; 5 = Strong

[6] Vine Maturity: 1 = Early; 5 = Late

[7] Tuber Shape: 1 = Round; 5 = Long, Narrow

[8] Skin Color: 1 = Pale; 5 = Dk. Red

[9] Eye Depth: 1 = Deep; 5 = Shallow

Table 3. Relative tuber composition of NDO2686-6R, Red LaSoda, and Dk. Red Norland at Aberdeen, ID[1].

Entry	% Oven Dried Solids	% DWB			Mg/100g FWB	
		Dextrose	Sucrose	Protein	Vitamin C	Total Glycoalkaloids
NDO2686-6R	18.96	0.03	0.17	5.77	26.99	3.19
Red LaSoda	17.97	0.07	0.19	6.22	28.47	3.39
Dk. Red Norland	16.49	0.04	0.16	6.53	23.15	3.03

[1] 1997 courtesy Dr. Dennis Corsini, ARS/USDA

Table 4. Yield and quality characteristics of NDO2686-6R, Red LaSoda, and Dk. Red Norland in Oregon and California Trials 1992 - 1998[1].

Entry	Location	Years	Yield cwt/a						% Marketable[2]	Spec. Grav.
			Total	<4 oz	US No. 1 4-10 oz	Total Marketable[2]	US No. 1 >10 oz	Culls		
NDO2686-6R	Corvallis	4	469	94	316	410	51	8	87	1.075
	Klamath Falls	6	424	90	286	376	43	5	89	1.073
	Bakersfield	5	311	50	234	284	18	9	91	1.085
	Tulelake	5	443	32	361	393	45	9	89	1.078
	AVG.		412	67	299	366	39	8	89	1.078
Red LaSoda	Corvallis	4	579	35	248	283	225	71	49	1.071
	Klamath Falls	6	587	39	270	309	213	66	53	1.073
	Bakersfield	5	466	12	251	263	147	56	56	1.078
	Tulelake	5	542	7	271	278	209	55	51	1.074
	AVG.		544	23	260	283	199	62	52	1.074
Dk. Red Norland	Corvallis	4	612	57	325	382	132	98	62	1.075
	Klamath Falls	6	425	63	241	304	87	34	72	1.067
	Bakersfield	4	444	20	314	334	71	39	75	1.073
	Tulelake	3	421	17	233	250	97	74	59	1.071
	AVG.		476	39	278	318	97	61	67	1.072

[1] Locations: Corvallis and Klamath Falls (Oregon); Bakersfield and Tulelake (California).

[2] Yield < 4 oz. - ≤ 10 oz.

MAZAMA

#200100092

Mazama, tested as NDO2686-6R, was selected in 1989 at Klamath Falls, Oregon from a cross between 1196-2R and Redsen performed by Dr. Robert Johansen of North Dakota State University, at Fargo in 1987.

Developers: Oregon, North Dakota, California, Idaho and Washington Agricultural Experiment Stations.

Mazama consistently produces similar marketable yields but lower total yields than either Red LaSoda or Dark Red Norland. Mazama tubers have bright red skin color that does not fade in storage. Mazama is suitable for table use and the red-skinned creamer market.

Strengths: good marketable yield, bright red skin color, shallow eyes, few internal and external defects, and excellent appearance.

Weaknesses: susceptible to most fungal diseases and to corky ringspot.

Incentives for Production: attractive tuber type, high percentage of marketable tubers, bright red skin color with shallow eyes, and excellent pack-out.

Compared to Red LaSoda

Marketable Yield	0
Grade	+++
Skin Color	+++
Storability	0
External Defects	++++
Internal Defects	++++
Eye Depth	++++

+ = better, 0 = same, - = worse

Agronomic Characteristics

Maturity	Early
Tubers	Oval, bright red skin, and smooth with shallow eyes
Marketable Yield	Medium (300 cwt./acre), with high percentage <4 oz.
Specific Gravity	Low (1.073)
Culinary Quality	Good
Diseases	**MS** to fusarium dry rot, **S** to most fungal diseases and corky ring spot.
Storability	Similar dormancy to other red varieties, skin color does not fade in storage

MS = moderately susceptible, **S** = susceptible

	Total Yield	Yield U.S. No. 1's			Yield		%	Specific
		<4 oz	4-10 oz	Marketable[1]	>10 oz	Culls	Marketable[1]	Gravity
Idaho[2]								
Mazama	327	84	192	276	48	3	84	1.072
Red LaSoda	448	35	189	224	188	36	50	1.071
Dk. Red Norland	378	50	187	237	102	39	63	1.067
Oregon[3]								
Mazama	449	89	300	389	53	7	87	1.076
Red LaSoda	598	37	264	301	225	72	50	1.073
Dk. Red Norland	569	56	308	364	141	64	64	1.073
Washington[4]								
Mazama	306	109	169	278	17	11	91	1.072
Red LaSoda	408	53	188	241	108	59	59	1.063
Dk. Red Norland	374	63	189	252	77	45	67	1.066

[1] < 4 oz - 10 oz. U.S. No. 1's
[2] 3 trials grown in Idaho, 1994, 1995, 1997, at Aberdeen and Kimberly
[3] 6 trials grown in Oregon, 1994, 1995, 1997, at Corvallis and Klamath Falls
[4] 3 trials grown in Washington, 1994, 1995, 1997, at Ellensburg, Pasco, Toppenish

For full-text descriptions and additional data visit: http://oregonstate.edu/potatoes/Mazama.PDF

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER:	3. VARIETY NAME:
State of Oregon by/through STBHE acting on behalf of Oregon State University ATT. per Correspondence May 24, 2007	NDO2686-6R	Mazama
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)* Office of Technology Transfer Oregon State University 312 Kerr Administration Building Corvallis, OR 97331 LMC 5-29-07	**5. TELEPHONE** *(Include area code)* 541-737-0674	**6. FAX** *(Include area code)* 541-737-3093
	7. PVPO NUMBER #200100092	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** ☒ **YES** ☐ **NO**

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** ☒ **YES** ☐ **NO**

10. Is the applicant the original owner? ☒ **YES** ☐ **NO** **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
☐ **YES** ☐ **NO** **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
☐ **YES** ☐ **NO** **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

The STATE OF OREGON, Acting by and Through the State Board of Higher Education on behalf of OREGON STATE UNIVERSITY is a partner in the Northwest (Tri-State) Potato Variety Development Program and a signatory of the General Agreement on Policy and Procedure for Release of New Publicly Developed Plant Varieties in Idaho, Oregon and Washington, between Washington State University, Oregon State University, University of Idaho and the United States of America, as represented by the Secretary of Agriculture. In accordance with provision 2.2 of this Agreement, Oregon State University is applying for this PVPC.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT F
DECLARATION REGARDING DEPOSIT

NAME OF OWNER (S)	ADDRESS *(Street and No. or RD No., City, State, and Zip Code and Country)*	TEMPORARY OR EXPERIMENTAL DESIGNATION NDO2686-6R VARIETY NAME Mazama
State of Oregon by/through STBHE acting on behalf of Oregon State University per correspondence May 29, 2007 LMC 5-29-07	*Office of Technology Transfer* *Oregon State University* *312 Kerr Administration Building* *Corvallis, OR 97331* *United State of America*	
NAME OF OWNER REPRESENTATIVE (S)	ADDRESS *(Street and No. or RD No., City, State, and Zip Code and Country)*	FOR OFFICIAL USE ONLY
Office of Technology Transfer c/o Sarah Mabee Oregon State University A312 Kerr Administration Bldg Corvallis, OR 97331-2140 USA	~~P.O. Box 5997~~ ~~Portland, OR 97228~~ ~~United States of America~~ per correspondence June 11, 2007 LMC July 16, 2007	PVPO NUMBER **#200100092**

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Signature: [signature] Date: 2/22/2007